REMARKS/ARGUMENTS

New claim 1 corresponds to the subject-matter of original claims 1 and 10 and subject-matter disclosed in the application as filed, especially on page 4, lines 12-18 (paragraph [0008]), page 7, line 30 – page 8, line 2 (paragraph [0025]), page 8, line 29 – page 9, line 1 (paragraph [0026]), page 9, lines 4-6 (paragraph [0026]), page 9, lines 14-17 (paragraph [0027]), page 10, lines 13-15 (paragraph [0028]), page 16, lines 7-9 (paragraph [0076]) and page 18, lines 17-18 (paragraph [0083]). The claim has furthermore been clarified that it relates to a method of providing a pre-metered combined dose. The wording pre-metered is supported in the application as filed, where it is extensively described that the at least two medicaments are metered and deposited on the common dose bed during the provision of the medical product comprising the dose bed, the at least two medicaments and the seal. This means that the medicaments are metered and deposited during the manufacturing process of the medical product.

New claim 22 corresponds to the original claim 2 and subject-matter disclosed on page 7, lines 17-20 (paragraph [0024]).

New claim 25 specifies that the at least two medicaments are deposited to form a combined dose having a general elongated shape. This feature is disclosed in the application as filed, e.g. on page 10, lines 8-13 (paragraph [0028]) and especially in the figures, where all illustrated combined doses have elongated shape, independently of how they are composed.

New claim 26 specifies that the at least two medicaments are deposited in different compartments in the common dose bed. This feature is disclosed in the application as filed, e.g. on page 7, lines 15-16 (paragraph [0024]), page 7, line 28 – page 8, line 2 (paragraph [0025]) and page 10, lines 2-5 (paragraph [0028]) and Figs. 1 and 2.

New claim 27 specifies that the at least two medicaments are separated by a biologically acceptable, inert substance. This feature is disclosed in the application as filed, e.g. on page 8, line 29 – page 9, line 4 (paragraph [0026]) and Figs. 4, 5, 7, 10a and 10b.

New claim 28 specifies that the combined dose is adapted for delivery by gradual aerosolization through a relative motion between the dose bed and a nozzle. This feature is disclosed in the application as filed, e.g. on page 7, lines 21-23 (paragraph [0024]) and Figs. 10a and 10b.

New claims 31 and 38 correspond to subject-matter of the original claims 11 and 17 and subject-matter disclosed in the application as filed, especially on page 4, lines 12-18 (paragraph [0008]), page 7, line 30 – page 8, line 2 (paragraph [0025]), page 8, line 29 – page 9, line 1 (paragraph [0026]), page 9, lines 4-6 (paragraph [0026]), page 9, lines 14-17 (paragraph [0027]), page 10, lines 13-15 (paragraph [0028]), page 16, lines 7-9 (paragraph [0076]) and page 18, lines 17-18 (paragraph [0083]).

New claim 33 corresponds to the original claim 14 and subject-matter disclosed on page 7, lines 17-20 (paragraph [0024]).

New claim 34 specifies that the at least two medicaments are deposited to form a combined dose having a general elongated shape. This feature is disclosed in the application as filed, e.g. on page 10, lines 8-13 (paragraph [0028]) and especially in the figures, where all illustrated combined doses have elongated shape, independently of how they are composed.

New claim 35 specifies that the at least two medicaments are deposited in different compartments in the common dose bed. This feature is disclosed in the application as filed, e.g. on page 7, lines 15-16 (paragraph [0024]), page 7, line 28 – page 8, line 2 (paragraph [0025]) and page 10, lines 2-5 (paragraph [0028]) and Figs. 1 and 2.

New claim 36 specifies that the at least two medicaments are separated by a biologically acceptable, inert substance. This feature is disclosed in the application as filed, e.g. on page 8, line 29 – page 9, line 4 (paragraph [0026]) and Figs. 4, 5, 7, 10a and 10b.

The remaining claims have correspondence in the claims as originally filed. No new matter has been entered.

In the new claims, the expression "prolonged delivery" has been clearly defined by specifying the time duration of such a prolonged delivery. Also, the term "high" has been removed from the claims Therefore, the objection to the usage of relative terms is no longer applicable for the new claims. Claims comprising other terms and expressions found indefinite, unclear or relative on page 4 in the Office communication are no longer present in the new claims, and therefore those objections are no longer relevant, and the rejection under 35 U.S.C. § 112 should be withdrawn.

The rejections of the claims over prior art are traversed.

In the Office communication the following prior art documents were cited:

Haikarainen et al.	WO 00/64519 A1
Davies et al.	US 2002/0053344 A1
Clarke et al.	US 2002/0103260 A1
Nilsson et al.	US 6,422,236 B1
Akehurst et al.	US 6,303,103 B1

Haikarainen discloses a multi-dose dry powder inhaler, wherein the inhaler comprises two medicament containers, each containing a supply of dry medicament powder corresponding to a multitude of metered doses (page 3, lines 21–23). In connection with an inhalation, medicament powder from the two containers is transferred to a metering member

equipped with two dosing recesses for receiving a metered dose of the respective powdered medicament (page 3, lines 23-25). The inhaler then has two aerosolization channels, each positioned over one of the two recesses (page 2, lines 29-31, page 4, lines 29-31). The metered doses are discharged simultaneously through the different aerosolization channels and are mixed first in the user's air channel or respiratory tract (page 2, lines 27-29)

The present invention is very different from Haikarainen. Firstly, the present invention relates to a pre-metered combined dose of at least two medicament powders separately deposited onto a common dose bed, where the combined dose enclosed in a medical product is intended to be introduced into a dry powder inhaler device (DPI). The combined dose is further sealed to prevent the dose, up to the inhalation instance, from any ingress or moisture that otherwise will deleterious affect the medicament powders. Thus, the pre-metered combined dose is released and aerosolized from the dose container directly, without first being removed from the container and brought to a new position inside the DPI from where the aerosolization takes place, as in Haikarainen.

Usage of a multi-dose container as Haikarainen has several drawbacks compared to the pre-metered combined dose of the present invention. Over time, a gradient of the medicament powders is created in the two multi-dose containers. Thus, an unwanted distribution and separation of powder particles with different dimensions and sizes is obtained. This in turn leads to differences in the compositions of the doses delivered over time and it will not be possible to deliver exact and consistent doses that contain a same powder composition (in terms of powder particle sizes) at each and every inhalation procedure. As a consequence, the doses delivered by an inhaler according to Haikarainen will behave differently in the user's respiratory tract system and will become deposited at different locations in the respiratory tract/lung.

Furthermore, it is extremely difficult if not nearly impossible to keep a low moisture level in and prevent moisture from entering the relatively large multi-dose containers used in Haikarainen. As a consequence, moisture will cause the powder particles to agglomerate and aggregate into larger clusters, which in turn affects the gradient and size distribution discussed above, and makes it very hard to delivery fine particles at the desired location in the user's respiratory system. The pre-metered dry powder medicinal combined dose of the present invention can be manufactured and provided in a low-humidity environment and this low-humidity is maintained by sealing the combined dose.

In conclusion, Haikarainen presents an inhaler, which uses totally different techniques as compared to the present invention for administering a combination of medical dry powder doses. This prior art inhaler is furthermore marred by several deleterious drawbacks and limitations that the present invention does not have. The present invention as defined by the new claims is therefore novel and non-obvious over Haikarainen.

Davies discloses an inhalation device that uses a medicament pack that comprises two sheets peelably secured to one another (paragraph [0004], [0041]). These two sheets define a plurality of medicament containers spaces along the length of the sheets (paragraph [0005]). In connection with inhalation, the two sheets are peeled apart a sufficient portion to expose the contents of a dose pocket, which is being brought into alignment with a slot that is in connection with a nozzle (paragraph [0050]).

Davies teaches that medicaments can be delivered in combinations [0094]. In this context, Davies goes on saying that the formulations contain combinations of active ingredients. This means that at least two active ingredients are mixed together and provided in a single dose pocket. This means that the medicament pack of Davies is marred by problems and drawbacks in terms of mixing difficulties, problems in controlling the

respective proportions of the active agents in the mixture, etc. already mentioned in the background section of the present specification.

The only arguable direction of response taught by this reference in relation to these drawbacks might be to use a medicament pack, where the different dose pockets comprise different active agents. For example, every second dose pocket could then include a first active agent and every other second pocket includes a second active agent. However, in such a case the two medicaments are not deposited on a same dose bed to form a combined dose. Furthermore, the user is not able to inhale the two medicaments in a single inhalation but has to first inhale the first active agent contained in one dose pocket, then move the medicament pack up to the next subsequent dose pocket and inhale the content of this next pocket in a new inhalation procedure. This solution furthermore has other drawbacks in terms of difficulties for the user to know what active agents are contained in the different dose pockets.

The present invention, on the other hand, teaches that the medicament powders to be combined in a dose are metered and deposited ***separately*** on a common dose bed. The combined dose is adapted for delivery by a DPI to a user during the course of a single inhalation. Since Davies does not disclose or even suggest anything falling within the scope of the new claims and no directed modification of Davies, if thought of, suggests the new claims, the present invention as defined by the new claims is patentable over Davies.

Clarke discloses inhalable compositions containing formoterol and fluticasone. Clarke discloses compositions in solution and dispersion forms as well as dry powder form. While the positive therapeutic effects of combining the substances are well known in prior art, different methods and devices of supplying formoterol and fluticasone to a subject in need thereof are still being developed. Clarke's disclosure should be seen in this light.

Clarke teaches that a dry powder composition comprising a unit dose of selected amounts of formoterol and fluticasone in a ***mixture*** together with a suitable carrier (excipient) may be loaded into a capsule or blister (paragraph [0012]). The capsule or blister may then be made available in a dry powder inhaler and the powder mixture administered to a user. The present invention teaches a different method and medical product for supplying a combined dose of, e.g., formoterol and fluticasone to a subject by inhalation. In clear contrast to Clarke, in the present invention the at least two active medicaments are separately deposited on a common dose bed and kept separated from each other to prevent any detrimentally interaction after forming the combined dose. Therefore, the solution presented by Clarke adds nothing to what was already discussed in the background section of the present application and is therefore subject to the problems identified in this section. For these reasons, the new claims are considered novel and patentable over Clarke.

Nilsson discloses a continuous dry powder inhaler that uses pre-metered medical powder carried by an exchangeable dosing means (column 2, lines 30-33). Each such individual dose is seaedl to preserve it during storing and is cut open during the inhalation process (column 2, lines 35-38). However, nowhere in this document is it disclosed that the dosing means contain a combined dose of at least two medicaments that are deposited and kept separated on a common dose bed and, when inhaled during a single inhalation process provide particles of each of the at least two medicaments as in new claims 21 and 31. As a consequence, two medicaments available on the dosing member taught by Nilsson would be kept on different dose beds and have to be administered in two separate inhalations. The new claims are therefore patentable over Nilsson.

Akehurst is not relevant for the present invention, because Akehurst teaches pharmaceutical aerosol formulations of salmeterol and an anticholinergic agent also comprising a propellant contained in a pressurized flask for use in a metered dose inhaler.

The present invention teaches a method of administering combined dry powder doses and medical devices comprising dry powder medicaments. The solution disclosed by Akehurst does not correspond to any of the limitations and features of the new claims 21 or 31 and therefore these claims are patentable over Akehurst.

Accordingly, and because none of the references either alone or in combination disclose or suggest the subject matter of the newly presented claims, Applicants respectfully request the reconsideration and withdrawal of the outstanding rejections.

Finally, several provisional double patenting rejections have been presented. However, the claims have been changed herein, and in addition this case appears to be the first in line for Issuance. Accordingly, it is requested that this case be allowed to issue first, and that as the cases noted in the double patenting rejections proceed through examination and issue that the possibility of double patenting then be considered there against the fixed, issued claims deriving from this application.

Respectfully submitted,

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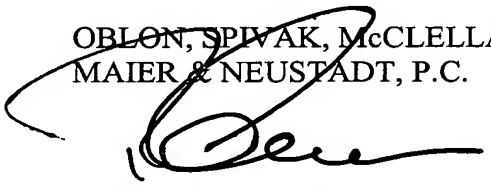

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